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SHOWING LOCATION OF PUREBRED AND GRADE STALLIONS IN UTAH BY COUNTIES.

Capsule Method of Breeding Mares

BY
W. E. CARROLL and H. J. FREDERICK
FOR THE
STATE BOARD OF HORSE COMMISSIONERS

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CAPSULE METHOD OF BREEDING MARES

BY W. E. CARROLL and H. J. FREDERICK

Some inquiry has been received by the State Board of Horse Commissioners relative to the capsule method of breeding mares. With the thought that a brief statement of the instruments used and the methods employed in the so-called capsule method of breeding might be useful to stallion men in general, this little circular has been prepared.

Advantages

Mares which have some malformation of the neck of the uterus will usually fail to "settle" when bred in the natural way. Where this malformation is the only trouble capsule breeding will prove successful where natural breeding has failed.

More mares can be bred by one stallion. With natural breeding one service of a stallion breeds but one mare; with the capsule method 10 or even more may be bred by a single cover from the stallion. This saves the disappointment of bringing a mare a long distance only to find other mares there in advance and the stallion able to serve but one.

Probably the advantage of most value to the mare owners is that their mares can be bred successfully when they are not in heat. Some claim that breeding mares when out of season is even more successful than when they are in season. Most mares object to service from a stallion when they are not in season, and yet are easily bred by the capsule method.

Artificial impregnation makes it possible to extend the usefulness of a good stallion to many times more mares. Where it is done with this in view it is indeed a benefit to the horse industry.

Cleanliness Essential.

The highest degree of success in capsule breeding can only be attained where absolute cleanliness attends all the operations, and where the temperature is controlled as outlined below. The germ cells, both male and female, are very sensitive to bacterial infection. Bacteria are encountered at every step in the operation, and precautions should be taken to destroy them as completely as possible. To this end all external parts of the mare which may come in contact with the hand or any instrument
used should be thoroughly disinfected by being washed in a solution of creolin, lysol, or other good disinfectant. They should then be thoroughly rinsed in clean, sterile, warm water, as a little of the disinfectant coming in contact with the semen will destroy its vitality.

Good soap and hot water should be used freely on the hands during the operation if they come in contact with anything not entirely sterile. Nothing but clean sterile towels should be used.

Where much capsule breeding is done, white suits kept well laundered will be found an advantage.

**Operating Room.**

A satisfactory operating room can be made of an office, a stall, or a tent. If a stall is used a canvass or wagon cover should be stretched tent shape in the stall to keep out all dust. The stall should be thoroughly cleaned and kept free from dust.

**Examination of Mares.**

All mares whether they are to be bred with capsules or not should be examined. This lessens the danger of contaminating the stallion by allowing him to serve a diseased mare. If diseased mares are not bred it improves the horses' record as a foal getter.

Any discharge from the vulva should be looked upon with suspicion.

The internal examination is most conveniently made by use of a speculum, a metal or glass device which is inserted into the vagina of the mare till the neck of the womb is visible.

The natural color of the lining membrane of the vagina is a pale healthy pink. If the examination reveals a red color, the congestion is likely due to an inflammation which will interfere with conception and the mare should not be bred at that time.

The neck of the womb should be examined to see if it is closed. If it is tight the forefinger should be inserted slowly and carefully till a capsule could be inserted. Do not try to insert two fingers.

**Collecting the Semen.**

**Utensils Needed.** The necessary utensils are a semen extractor with a flexible tip, a quart bowl, capsules, a vessel of warm water large enough to immerse the extractor when the piston is
extended, a device for keeping the water warm, a thermometer (a regular floating dairy thermometer is to be preferred), powdered slippery-elm bark or vaseline, soap, towels, and disinfectant.

**Sterilization of Utensils.** Just before using, all utensils, except capsules, should be thoroughly sterilized by being boiled in clean water for a few minutes. This is absolutely essential, as pointed out in a previous paragraph.

**Temperature.** After all utensils have been sterilized they should be transferred at once to a vessel of clean sterile water which is kept at a temperature of 100°F. The bath should never be allowed to vary more than 1°F. from this point. The spermatozoa in the semen are produced in the animal at this temperature and are very sensitive to any temperature change one way or the other. When the extractor is put into this bath it should be filled with warm water.

**Method of Collecting the Semen.** When all mares have been examined, their external organs sterilized, the utensils prepared as outlined above, the stallion is led out and allowed to cover some quiet mare in heat which the examination has shown to be perfectly normal and clean in every way. As the stallion mounts, the operator should approach the rear of the mare with the bowl and extractor both filled with the 100°F water. His arm should be previously greased with the powdered slippery-elm bark or vaseline. As the stallion begins to dismount empty the water from the bowl and catch any semen which may follow the penis out. As soon as this is done or if none comes out give the bowl to an assistant, immediately empty the extractor of water, grasp its end between the thumb and first two fingers, and gradually insert hand and all into the vagina, always keeping the point of the extractor thus protected.

If the semen has been discharged into the vagina the hand as it enters will detect this, and it can be taken up by pulling out the piston of the extractor. If no semen is encountered in the vagina it has been discharged into the uterus. To collect it from here carefully insert the point of the extractor (always preceded by the end of the forefinger) into the uterus. When in the length of the finger, bend the flexible end of the extractor downward by pressure from the forefinger above supported by the thumb underneath.

Firm yet gentle pressure downward will cause a pocket to
form in the floor of the uterus into which the semen will naturally flow. With the end still protected by the finger tip to prevent drawing in any of the delicate membrane lining the uterus, fill the extractor by gently pulling out the piston. When the instrument is filled straighten its point, draw it from the mare, take it at once to the operating room, and have the assistant immerse it in the water at 100° F. His finger should be kept over the end to protect the semen from water or air.

All operations, especially where the semen is exposed, should be done in an atmosphere free from dust.

The semen should be kept in as dark a place as is available and never should it be subjected to the direct rays of the sun even for an instant, as direct sun light very rapidly kills the spermatozoa.

**Filling Capsules and Inserting in Mare.**

Just before using the capsules they should be sterilized by being placed for a few minutes in a moderately hot oven. They must be kept dry as water dissolves them.

A capsule is held in one hand (usually the left), which should always be kept dry, while the assistant fills it about half full from the extractor. It is immediately capped and inserted, cap end first, into the uterus of a mare to be bred. This operation is repeated for each mare to be bred.

The danger of being kicked by the mare can be eliminated by tying or having the owner hold up the front foot on the side the operator works.

After capsule service a mare is allowed to go 18 days. If during that time she comes in heat she is given another capsule. If heat is not shown she will generally prove to be in foal.

Where a microscope is available a microscopic examination of the semen once or twice during the season will reveal the number of live spermatozoa, which is a good index to the fertility of the horse.

The necessary instruments and capsules for this artificial breeding can be obtained from any veterinary supply house, or most any druggist upon application will order them.